

## SCH4U Unit 1 Review

### Structures & Properties of Matter

#### Atomic History

#### Quantum Theory

- compare & contrast w/ Bohr
- Plank (blackbody radiation) & Einstein (photoelectric effect)

#### Quantum Numbers

$n, l, m_l, m_s$

#### Electron Configurations

- order shells are filled
- exceptions (half-full)

#### Energy Level Diagrams

- Aufbau principle
- Pauli exclusion principle
- Hunds rule

#### Lewis Diagrams

- expanded octet (*period 3 and below*)
- incomplete octet (*group 3*)
- resonance structures

#### Hybridization

*Example* - What is the hybridization of a nitrogen atom in  $N_2$ ?  
Sketch the hybridized orbitals and use energy level diagrams to help explain.

#### VSEPR

- electron pair arrangement
- molecular shapes

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### Polar Molecules

- pure vs polar vs ionic ( $\Delta EN = 0.5$  ,  $1.7$ )
- non-polar molecules containing polar bonds (SYMMETRY)

### Intermolecular Forces (IMF)

- H-Bonding, DDF, LDF

### Properties of Solids

- Network, Ionic, Molecular (polar & non-polar), Metallic

p263 #2-15, 19, 22, 26-29, 31-36, 41-53, 57, 59, 63

p268 #1-25

Additionally, Ch 3 & 4 Reviews